

Education

- **Carnegie Mellon University**, Language Technologies Institute, School of Computer Science Pittsburgh, PA
– Master of Science (Topics: Machine Learning and Information Retrieval) (Aug 2017 - Dec 2018)
– Project: Conversational Search and Knowledge Acceleration with Dr. Jamie Callan
 - * Given a non-specific query, discover its subtopics, possible search paths and concepts based on initial search results.
 - * Support hands-free exploration of a broad subject via the discovered topic-tree on voice assistants.
- **Nanyang Technological University**, School of Computer Science and Engineering Singapore
– Bachelor of Engineering (First Class Honours) in Computer Science. (Aug 2010 – Jun 2014)
– Specialization in Intelligent Systems, Minor in Business.

Professional Experience

- **Google, LLC.** - *Software Engineer, Ads Integrity (Machine Learning Infrastructure)*, Pittsburgh, PA (Jan 2019 - Present)
 - Built pipelines to enable offline model evaluations on past traffic, cutting down total evaluation time to 16%.
 - Improving model development and evaluation pipelines by building a composable tooling suite.
- **Zendesk, Inc.** - *Senior Software Engineer, Zendesk Chat (Backend/Platform)*, Singapore (Jul 2016 - Aug 2017)
- **Zendesk, Inc.** - *Software Engineer, Zendesk Chat (Backend/Platform)*, Singapore (Jul 2014 - Jul 2016)
 - As *Engineering Lead* for the internal **push-notification microservice** project, re-wrote session management logic, architected new systems and infrastructure to support robust push notification delivery.
 - As *Engineering Lead* for the internal microservice for **feature entitlement**, designed the underlying rule-engine, led development for the service, serving ~20k RPS at peak.
 - Developed various iterations of the application that powers live chat, working on features like REST API for ongoing chats, support for concurrent sessions, low-level protocol enhancements etc.
 - Replaced legacy billing system by integrating with the shared Zendesk-wide billing service, followed by writing mechanisms to migrate existing customers to it en masse.
 - Wrote the **event framework** that produces product-wide events to Kafka. Added a system to defer high-volume writes via Logstash.
 - Made several improvements to the unit test suite: improvements to the test suite lifecycle, increased coverage and heavily reduced suite run-times with micro-optimizations.
 - *Miscellaneous Responsibilities* - Hiring; mentoring; maintenance of dev environments, staging servers & CI setup.
 - *Technologies Used* - Python, Django, Flask, Celery, Nose, JavaScript, Node, Redis & Redis Cluster, Memcached, Kafka, Logstash, MySQL, Docker, etc.
- **IBM Corporation** - *Software Engineering Intern*, Singapore (May 2013 - Aug 2013)
- **IBM Corporation** - *Software Engineering Intern*, Singapore (Jun 2012 - Dec 2012)
 - Built the fully-featured, UIWebView-based embedded browser for a mobile port of IBM Security Access Manager for Enterprise Single Sign-On, ISAM-ESSOm, for providing web single sign-on capabilities on the iOS platform.

Open Source Contributions (Selected)

- **TwitterCLDR** - Added features such as Text Segmentation, Unicode Regex Parser, Rule-based number formatting, etc to Twitter's open source library for tools to work with Unicode in JavaScript.
- **raven-python** - Added per message capture-sampling and support for logging filters and exclusions for Flask.
- **txconnpool** - Added support to create a connection pool to a pool of servers rather than just 1.
- **blinker** - Added support for sending signals without propagating resulting exceptions and support for connecting via multiple objects in a single decorator.

Technical Skills

- Languages: Competent: Python. Familiar: Javascript, CoffeeScript, Java, Objective-C, and others.
- Technologies (misc.): Django, Flask, Celery, Nose, Node, Jasmine, Redis, Redis Cluster, Memcached, MySQL, Kafka, Docker, Logstash, Unix etc.

Other Projects (Selected)

- **Virtual Interaction with Physical Objects Using Kinect and iPhone** - *Final Year Project* - Interfacing a Kinect, an iPhone, and a projector with a central server to process motion to demonstrate virtual interaction with real objects.
- **Facebook Search** - *Information Retrieval* - App to perform full text search on a user's post history.
- **Twitter Visualizer** - *Data Mining* - App to generate a timeline for the worldwide flow of hashtags and track local trends.
- **Twitter Summarizer** - *NLP* - An app to summarise information on a topic by extracting descriptive phrases from tweets.
- **dBauggle** - *Software Engineering* - iOS word-game for children with special needs, built with cocos2d.
- **Pebble Music Tweeter** - *Hobby* - Pebble Watchapp + companion iOS app using the Twitter API and Pebble SDK to Tweet the currently playing music from the smartwatch.

Extra-Curricular Activities (University)

- **NTU Open Source Society** (Aug 2010 - May 2014)
 - **President** in AY2012-13, **Vice-President** in AY2011-12
- **IT & Media Officer - Computer Engineering Club (Students' Council)** (Sept 2012 - Aug 2013)
- **Layout Editor - The Tribune**, Official Campus Newspaper (Sept 2011 - Aug 2012)

Awards

- **Dean's List** - Academic Year 2013-14
- **Dean's List** - Academic Year 2012-13
- Awarded President's Research Scholarship - offered to the top 5% of the cohort - Academic Year 2011-12